

Unusual Postoperative Course After Lumbar Endoscopic Decompression and Lessons Learned: A Case Report

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Introduction

The landscape of American healthcare has migrated towards more minimally invasive surgical procedures. A form of minimally invasive spine surgery umbrella-ed by the term endoscopic spine surgery has begun to encompass surgical objectives that were previously only achievable with traditional open spine surgery.¹ The advent of these endoscopic procedures aimed at decompression of key pain-generating spinal pathology also comes with a host of considerations that are not privy to a vast body of data that accompanies open spine surgery. This case highlights a patient who underwent endoscopic spine surgery and presents a consideration that is unique to endoscopic spine procedures.

Methods

As the case report is devoid of identifiable patient information, it is exempt from IRB review requirements as per University of Florida, Department of Anesthesia policy. Verbal Consent was obtained from the patient to submit a case report, ensuring it will be devoid of patient identifiable information.

Case

A male in his early seventies presented with chronic lumbar radicular pain that radiated to the bilateral lower extremities with left lower extremity numbness and intermittent bilateral lower extremity weakness. Conservative treatment was followed in a stepwise approach beginning with physical therapy, NSAIDs, and acetaminophen therapy, and finally multiple epidural steroid injections. Lumbar MRI was significant for L3-4 ligamentum flavum thickening and moderate-severe spinal canal narrowing, and L4-5 mild spinal canal narrowing. The patient elected to proceed with endoscopic nerve decompression under direct endoscopic visualization. Intraoperatively, minor bleeding was noted at the end of the procedure and hemostasis was achieved via Trigger Flex cautery and 10 milliliters of Floseal. Postoperatively the patient had a neurological examination that was at his preoperative baseline and was subsequently discharged the same day. On postoperative day 7, the patient continued to have symptoms of neurogenic claudication requiring assistance with ambulation but notably denied any symptoms of cauda equina syndrome or infection and demonstrated full strength on physical examination. The patient then received a transforaminal epidural steroid injection in an attempt to alleviate his continued pain. Following this procedure and an unsuccessful resolution of pain, a repeat MRI lumbar spine was ordered.

The Big Idea

Endoscopic spine surgery is a technique that is rapidly evolving. This case highlights another consideration needed with the use of Floseal and other injectates utilized in endoscopic spine surgery.



Image 1: Preoperative MRI demonstrating severe lumbar central canal stenosis.



Image 2: Post-operative MRI demonstrating a large 6.1 cm fluid collection in the epidural space, realized to be Floseal utilized to treat minor bleeding.

Initially the reading radiologist noted a 6.1 centimeter epidural fluid collection that was correlated to hematoma or possible abscess. After discussion with the neuroradiologist, the radiology report was amended to include a slowly reabsorbing collection of thrombin aggregate used intraoperatively. Approximately one month after the endoscopic decompression, the patient began ambulating without assistance, and eight weeks postoperatively the patient reports being fully recovered and completely free of pain which persists to the time of this writing.

Discussion

Endoscopic spine surgery was developed as a safe alternative to conventional open spine surgery for the treatment of degenerative spinal diseases. A known complication of spine surgery includes dural tears and bleeding, for which hemostasis is required.¹ Floseal, a gelatin hemostatic matrix, can be used to control this complication.^{2,3}

In open surgeries, there is no requirement to consider the volume of injectate due to the removal of surrounding posterior structures. However, with endoscopic surgeries, the surrounding structures remain intact and thus consideration of injectate physiologic half life and volume are paramount.⁴ In this case, the use of excess Floseal obscured the results of the surgery with the patient reporting no initial improvement in his pain and post-operative MRI showing a fluid collection that potentially could have been misdiagnosed as an epidural hematoma or abscess.⁵ Once the Floseal aggregate was absorbed and the area effectively decompressed then the patient began to experience the desired effects of pain relief. The **aim** of this case report is to shed light on the necessity to report outcomes not typically considered with more conventional operations and to debut the events of this patient as a possible benign clinical course that masquerades as something more clinically devastating.

References

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